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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/721,140   | 11/25/2003  | Timothy P. Bender    | D/A1440             | 6331             |
| 25453  | 7590        | 01/05/2005           | EXAMINER            |                  |
| PATENT DOCUMENTATION CENTER<br>XEROX CORPORATION<br>100 CLINTON AVE., SOUTH, XEROX SQUARE, 20TH FLOOR<br>ROCHESTER, NY 14644 |             |                      | ASHTON, ROSEMARY E  |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1752                |                  |

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/721,140

Applicant(s)

BENDER, TIMOTHY P.

Examiner

Rosemary E. Ashton

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-80 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

Art Unit: 1752

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-20, drawn to a polyarylene ether polymer, classified in class 528, subclass 86.
  - II. Claims 21-40, drawn to a polyarylene ether polymer, classified in class 528, subclass 86.
  - III. Claims 41-68, drawn to a process of making a polyarylene ether polymer, classified in class 528, subclass 86.
  - IV. Claims 69-74, drawn to an imaging member, classified in class 430, subclass 320.
  - V. Claims 75-80, drawn to an imaging member, classified in class 430, subclass 320.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions Group I and Group III are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by reacting a hydroxyaromatic compound with an alcohol in the presence of a catalyst of potassium benzoate as taught in Biller et al. U.S. patent no. 6,624,334.

3. Inventions Group I and Group IV, as well as Group II and Group V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different

Art Unit: 1752

process of using that product (MPEP § 806.05(h)). In the instant case the product may be used to form a lithographic printing plate.

4. Inventions Group I and Group II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are different polyarylene ether polymers wherein Group I has group D but not groups B and W. The polymer in claim 21 has groups B and W but not group D.

5. Inventions Group IV and Group V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions because the imaging members use different polymers wherein Group IV uses the polymer of Group I and Group V uses the polymer of Group II. The polymer of Groups I and II are unrelated for the reasons stated in paragraph 5 above.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

#### **Election of Species**

7. Claims 1,21,41,69 and 75 are generic to a plurality of disclosed patentably distinct species comprising different polymers. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Art Unit: 1752

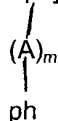
The polymers claimed in the independent claims are extremely numerous due to the plethora of combinations available from the defined groups for A,B,D,W,Z,A'', etc., thus applicant is required to pick an elected species for the elected invention. In paragraphs A-E below the examiner has attempted to treat all the functional groups in the claims to direct applicant in choosing an elected species, however, if a functional group has been missed applicant is required to elect one group/species for examination.

A.

**In claim 1** there are two polymers with different branch points: ph= phenyl group

The first polymer is  $\text{Ar}-[\text{-O-ph-(A)}_m\text{-ph}]_x\text{-O-D}$

and the second polymer is  $\text{Ar}-[\text{-O-ph}]_x\text{-O-D}$



Applicant is requested to **elect either the first or second polymer** and then select the functional groups examined. In selecting either the first or second polymer applicant must choose **one A group** out of the fifteen groups in the Markush group (if selected the -C(O)- and -SO<sub>2</sub>- groups will be examined together for A); **one D group** must be selected from (a), (b) or (c), **if (c) is selected then one B group** out of the thirty-three groups in the Markush group must be chosen (if selected the -ph-C(CF<sub>3</sub>)<sub>2</sub>-ph-, -ph-C(CH<sub>3</sub>)<sub>2</sub>-ph- and -ph-C(CH<sub>3</sub>)(C<sub>2</sub>H<sub>5</sub>)-ph- groups will be examined together for B) and **one A group** must be selected. If formula -Ar'-N(Ar'')-Z-[N(Ar'')-Ar']<sub>q</sub> is chosen for B than **one Z group** must be selected from one of the three groups, **one Ar' group** and **one Ar'' group** must be chosen (ph and ph-G will be examined together for Ar' and Ar''). If formula -Ar'-(X)c-Ar'- is selected than **one X group** must be chosen from one of the nine groups and **one Ar' group** must be chosen (ph and ph-G will be examined together). The **Ar group** must be chosen as (a) a substituted aryl group or a substituted arylalkyl group, (b) an unsubstituted aryl group or an unsubstituted arylalkyl group, (c) an aryl group having one or more heteroatoms therein or an arylalkyl group having one or more heteroatoms therein, (d) an aryl group having no heteroatoms therein or an arylalkyl group having no heteroatoms therein.

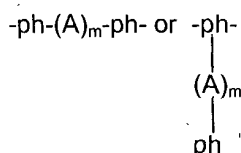
Art Unit: 1752

If claim 1 is elected as the invention to be examined claims 2-6 and claims 7-11 will be examined if the same groups are chosen in claim 1. Claims 32-34 will be examined if group (b) is chosen for D in claim 1. Claim 35 will be examined if Ar is a substituted aryl group or a substituted arylalkyl group. Claims 16-20 will be examined with any of the elected species.

B.

**Claim 21** claims a polymer having the formula  $\{Ar-[-O-W]_o-O\}_k-[B-O-W-O]_n-$ .

Applicant is requested to choose **one W group** of the two groups shown below,



**one A group** out of the fifteen groups in the Markush group (if selected the -C(O)- and -SO<sub>2</sub>- groups will be examined together for A) and **one B group** out of the thirty-three groups in the Markush group must be chosen (if selected the -ph-C(CF<sub>3</sub>)<sub>2</sub>-ph-, -ph-C(CH<sub>3</sub>)<sub>2</sub>-ph- and -ph-C(CH<sub>3</sub>)(C<sub>2</sub>H<sub>5</sub>)-ph- groups will be examined together for B). If formula -Ar'-N(Ar'')-Z-[N(Ar'')-Ar']<sub>q</sub> is chosen for B than **one Z group** must be selected from one of the three groups, **one Ar' group** and **one Ar'' group** must be chosen (ph and ph-G will be examined together for Ar' and Ar''). If formula -Ar'-(X)c-Ar'- is selected than **one X group** must be chosen from one of the nine groups and **one Ar' group** must be chosen (ph and ph-G will be examined together).

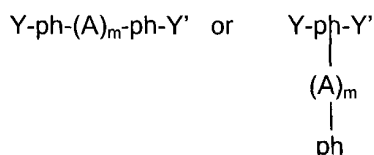
The **Ar group** <sup>one</sup> must be chosen <sup>from</sup> (a) a substituted aryl group or a substituted arylalkyl group, (b) an unsubstituted aryl group or an unsubstituted arylalkyl group, (c) an aryl group having one or more heteroatoms therein or an arylalkyl group having one or more heteroatoms therein, (d) an aryl group having no heteroatoms therein or an arylalkyl group having no heteroatoms therein.

Claims 22-26 and claims 27-31 will be examined only if the same groups are chosen in claim 1. **Claim 21 does not have a terminal group, thus claims 32-34 will receive an objection.** Claim 35 will be examined if Ar is a substituted aryl group or a substituted arylalkyl group. Claims 36-40 will be examined with any of the elected species.

Art Unit: 1752

C.

**Claim 41** claims a process for preparing a polymer comprising reacting (ii) a phenol  $\text{Ar}(\text{OH})_x$  and (iii) a compound having one of the following formulas shown below



(iv) a dihydroxy  $\text{HO-B-OH}$  compound and (v) optionally, a phenol compound  $(\text{R}')_a\text{-ph-OH}$ .

Applicant is requested to **elect either the first or second compound (iii)** and then select the functional groups examined. For example in selecting either the first or second compound applicant must choose **one A group** out of the fifteen groups in the Markush group (if selected the  $-\text{C}(\text{O})-$  and  $-\text{SO}_2-$  groups will be examined together for A)

In the compound (iv) having the formula  $\text{HO-B-OH}$ , **one B group** out of the thirty-three B groups must be selected (if selected the  $-\text{ph-C}(\text{CF}_3)_2\text{-ph-}$ ,  $-\text{ph-C}(\text{CH}_3)_2\text{-ph-}$  and  $-\text{ph-C}(\text{CH}_3)(\text{C}_2\text{H}_5)\text{-ph-}$  groups will be examined together for B). If formula  $-\text{Ar}'\text{-N}(\text{Ar}'')\text{-Z-[N}(\text{Ar}'')\text{-Ar}']_q$  is chosen for B than **one Z group** must be selected from one of the three groups, **one Ar' group** and **one Ar'' group** must be chosen (ph and ph-G will be examined together for Ar' and Ar''). If formula  $-\text{Ar}'\text{-(X)c-Ar}'$  is selected than **one X group** must be chosen from one of the nine groups and **one Ar' group** must be chosen (ph and ph-G will be examined together).

For compound (v)  $(\text{R}')_a\text{-ph-OH}$  **one R' group** must be selected from the six groups claimed (H, alkyl and aryl will be examined together).

For compound (ii)  $\text{Ar}(\text{OH})_x$  the **Ar group** must be chosen as (a) a substituted aryl group or a substituted arylalkyl group wherein substitution is other than the hydroxyl groups (b) an unsubstituted aryl group or an unsubstituted arylalkyl group excluding the hydroxyl group substitution (Ar can not have groups other than OH groups), (c) an aryl group having one or more heteroatoms therein or an arylalkyl group having one or more heteroatoms therein, (d) an aryl group having no heteroatoms therein or an arylalkyl group having no heteroatoms therein. For compound (ii)  $\text{Ar}(\text{OH})_x$  in **claim 54** one of the compounds (a)-(g) must be selected.

Art Unit: 1752

Compounds (a) and (b) will be examined when Ar is a substituted aryl group or a substituted arylalkyl group in claim 41 and compounds (c-g) will be examined when Ar is an unsubstituted aryl group or an unsubstituted arylalkyl group in claim 41. In **claim 55** one compound must be selected for examination for compound (ii).

*If claim 41 is elected as the invention to be examined claims 42-46 and claims 47-51 will be examined only if the same groups are chosen in claim 41. Claim 53 will be examined if Ar is an unsubstituted aryl group or an unsubstituted arylalkyl group. Claim 56 will be examined if A in claim 41 is elected as -C(O)- or -S(O)<sub>2</sub>-. Claim 57 will be examined if B is the same compound as elected in claim 41. Claims 60,61 will be examined when R' is elected as H, alkyl or aryl. Claims 52,58,59,63-68 will be examined with any of the elected species. All but naphthol will be examined in claim 62 when R' in claim 41 is elected as H, alkyl or aryl.*

D.

For **claim 69** drawn to an imaging member using the polymer of claim 1 the same election of species for the polymer as detailed <sup>IN</sup> paragraph (A) above must be applied.

*If claim 69 is elected as the invention to be examined claims 70-74 will be examined with the elected species.*

E.

For claim 75 drawn to an imaging member using the polymer of claim 21 the same election of species for the polymer as detailed in paragraph (B) above must be applied.

*If claim 75 is elected as the invention to be examined claims 76-80 will be examined with the elected species.*



Art Unit: 1752

8. A telephone call was made to Judith Byorick on December 28, 2004 to request an oral election to the above restriction requirement, however, as Ms. Byorick was not available until January 3, 2004 a written restriction was made due to the complexity of the election of species.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosemary E. Ashton whose telephone number is 571-272-1326. The examiner works a part-time work schedule and can normally be reached M-F between 11:30 am – 5:30 pm.

If multiple attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached at 571-272-1526.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Art Unit: 1752

Should you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

rea  
December 30, 2004



Rosemary E. Ashton  
Primary Examiner  
Art Unit 1752

ROSEMARY ASHTON  
PRIMARY EXAMINER